Mumbai University

Question Paper

[CBSGS – 60:40 Pattern]

(April – 2014)

PAPER - IV

ELECTIVE

Geographic Information System

Time: 2 ½ Hours **Total Marks:** 60

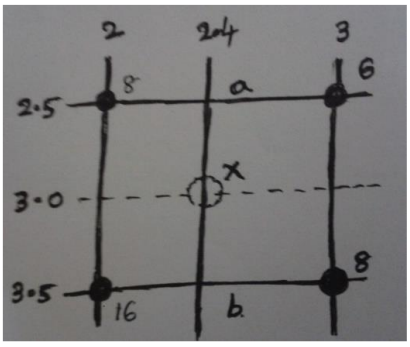
N.B.: **(1)** *All Question are Compulsory.*
(2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
(3) *Answer To The Same Question Must Be Written Together.*
(4) *Number To The Right Indicates Marks.*
(5) *Draw Neat Labeled Diagrams Wherever Necessary.*
(6) *Use of Non – Programmable Calculator is allowed.*

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) What is GIS? What are the different applications of GIS? **(5)**
(B) What is Map Projection? What are the commonly used Map Projections? **(5)**
(C) Describe projected coordinated system and also explain what Conversion between Data is? **(5)**
(D) How is Data Structure represented in Geo-Database Data Model? **(5)**

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Write Short Notes On: **(5)**
(i) *U.S. geological Survey*
(ii) *Federal Geographic data Committee*
(B) How to create geospatial data? Explain any two methods. **(5)**
(C) Explain affine transformation. **(5)**
(D) What is bilinear interpolation? Using bilinear interpolation method find the value of x in the following figure: **(5)**



Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) How are the attributes of Geospatial Data represented and how is it managed? **(5)**
(B) Explain the Colour Schemes and its use in Maps. **(5)**
(C) Describe the types of relationships that exist between the Relational Data. **(5)**
(D) Write a short note on Typography and its type variations. **(5)**

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) How Descriptive Statistics is used in Data Exploration? Also state any two types of Graphs used for Data Representation and Analysis. **(5)**
(B) What is Spatial Data Query? What are the various methods of feature selection? **(5)**
(C) Describe Query by Cell Value with an example. **(5)**
(D) How Map Comparison can be used for Data Exploration? **(5)**

[TURN OVER]

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain Buffering and how it is helpful in Vector Analysis. **(5)**

(B) What is Overlay? How are slivers related with Overlays? **(5)**

(C) Explain Neighbourhood Operation in Raster Analysis and calculate the same for the following data: **(5)**

1	2	3	3	2
2	1	3	2	3
1	3	2	3	1
2	2	2	1	1
3	1	3	3	2

(D) Differentiate between physical distance and cost distance. **(5)**

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) What is Spatial Interpolation? What are the different types of Spatial Interpolation? **(5)**

(B) Find the unknown value at 0 with the known values given as below: **(5)**

Point	X	Y	Value
1	20	25	12
2	15	20	15
3	18	20	16
4	14	16	10
0	15	18	?

(C) What are Thiessen Polygons? Give an example. **(5)**

(D) Explain the use of Thin Plate Splines. **(5)**